Recycling "Junk"

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A Case for Exaptation as a Response to Breakdown[1]

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Abstract

First language learners are "morphology machines," but second language learners are not. This phenomenon is at the heart of those cases of exaptation (in the sense of Lass 1990) where a loss in morphology due to language contact (second language acquisition) triggers new interpretations of morphological relics in a new generation of speakers (first language acquisition). Exaptation is, however, not restricted to morphology. This paper presents two case studies, one from phonology to morphology and syntax (the Celtic mutations), and one from syntax to discourse (verb-second in Early Modern English). The paper argues that a central notion in exaptation, and possibly the key fact that distinguishes it from the notion of reanalysis, is breakdown in transmission. Breakdown makes it more challenging for learners to recover the interpretation of a feature. They will often succeed nevertheless by fine-tuning hypotheses until they have a reasonable fit. Exaptation, then, is an accidental by-product of the (first and second language) acquisition toolkit: learners' hypotheses may occasionally differ spectacularly from their "model". It is then that we see how powerful the toolkit really is.

1. *Introduction*

Lass' (1990) original case studies of exaptation describe the reinterpretation of a morphological feature. His first case study is the tense system in early Germanic, where he claims that the different vocalisms of the singular and the plural forms of the preterite are the remnants of an older aspectual system, uninterpretable "junk" to new generations of language acquirers, which were given a new interpretation along the lines of subject-verb agreement. This case-study has since been challenged on the grounds that it does not appear to be a Germanic innovation but an extension of an existing pattern (Ramat 1998: 109-110), but Lass' point remains – even if not a Germanic innovation, the pattern still requires an explanation. The time-depth involved makes it a difficult case to argue. His second case study is much more recent. It is provided by Afrikaans, where the Dutch system of adjectival gender agreement (itself a remnant of a strong/weak adjectival declension paradigm), which depended on the acquisition of grammatical gender to make sense, became junk to a generation of language acquirers who had to construct the system on the basis of language input from which gender had been lost.

Lass calls these processes *exaptation*, an expression coined by evolutionary biologists Stephen Jay Gould and Elisabeth Vrba (1982), as a term to describe changes in an organism that do not appear to be straightforward adaptations offering a direct cutting edge advantage in that organism's survival in its environment, but that were developments that originally arose for another function, or "for no function at all" (p6) - side-effects, so to speak, that proved useful in unexpected ways.[2]

What has been called linguistic exaptation makes use of the usual mechanisms of language change (first and second language acquisition[3]). It is just that some changes are more striking than others. I will argue that what distinguishes linguistic exaptation from concepts like reanalysis is the fact that it involves a previous stage in which there was a clear breakdown in transmission, and that it is this characteristic that make these changes so striking.

2. ***Exaptation: exclusively morphological?***

If the criterion that exaptation targets "junk", i.e. rogue morphology that has lost its meaning or function, can no longer be sustained (as has been argued by Vincent 1995, De Cuypere 2005), it is difficult to argue that exaptation is crucially different from any other case of reinterpretation. There are, of course, many cases of reinterpretation that remain below the waterline and do not acquire the same prominence as the exaptation case studies in the literature. Noun classifier systems are in a constant state of flux, with the variation encountered in the input leading to reinterpretations of relatively meaningless "masculine/feminine" gendered nouns as, for instance, semantically-based oppositions: some inanimate nouns have been assigned masculine or feminine gender in Cantabrian Spanish on the basis of the semantic feature large/small: masc. *montón* '"stack of hay" versus fem. *montona* "very big stack of hay"; or a deprecatory/approbatory feature in masc. *carreteru* "a bad road" versus fem. *carretera* "a road" (Aikhenvald 2000: 27). Lexical items as members of compounds may be reinterpreted as derivational suffixes; the *–hood* suffix in English words such as *childhood* derives from a noun meaning "person, personality, sex, condition, quality, rank" (cf. *haidus* 'manner' in Gothic); derivational suffixes may be "lexicalized", reinterpreted as part of the lexical item, as the *–k* suffix in English *walk*, *talk*, *stalk*, which derives from an iterative or frequentative (*OED, talk (v)*). If Lass' initial concept of exaptation is redefined as '[t]he re-use of morphological markers' (Booij 2010: 211), then all these cases can be labelled exaptation.

Is exaptation restricted to morphology? Although Lass labels his case studies "from semantics to concord" and "from syntax to (mostly) morphology," both cases can be argued to involve morphological remnants acquiring a new life within morphology. "Semantics" in Lass' first case study refers to tense/aspect (perfect versus aorist), morphological categories, and "syntax" in his second case study refers to an adjectival declension, a bit of left-over morphology that no longer correlated with a communicative meaning but with the gender of the noun; the original weak/strong system expressing a definiteness /indefiniteness paradigm had been obscured by phonological erosion already in the donor language, Dutch.

This emphasis on morphology as the typical arena in which exaptation takes place is understandable: first language-acquirers are " morphology machines" in which the acquisition toolkit, with its cycles of inductive and deductive hypothesizing (Andersen 1973) is fully

operational. This is why geographically-isolated languages that have only had first-language acquirers for many generations typically develop "baroque" morphology (McWhorter 2002), with a proliferation of noun classes and polysynthetic systems that are redundant from the perspective of communication (although not redundant, perhaps, from the perspective of group identity).[4]

By contrast, morphology is vulnerable in situations of language or dialect contact that involve sizeable populations acquiring a second language or dialect after the critical period for language acquisition, as in migration or invasion contexts; the acquisition of Dutch adjectival inflection (the same bit of morphology as in Lass' study) has also been shown to be problematic for immigrants and their children who have to acquire Dutch as a second language (Blom & Weerman 2008), although the outcomes are different for the two age groups: the adults tend not acquire the inflection at all (morphological simplification), while the children acquire it but over-generalize it (morphological streamlining). The Dutch case actually requires a much closer look in view of Trudgill's (2011) argument that such contact situations do not necessarily lead to simplification: stable contact situations involving child bilingualism may actually give rise to morphological complexity. For the purposes of this paper, it is the hitch in transmission and the potential for breakdown that make such contact situations particularly interesting.

Lass himself notes that the term exaptation covers phenomena other than morphosyntax. "Semantic splitting of doublets (whatever their origin), as in *person/parson, kirk/church* (in Scotland), *skirt/shirt*, and the like is also clearly exaptive: if two forms code one meaning, one form is (potential) junk" (fn 10, 94). He also discusses the well-known case of *umlaut* in German being reanalysed as a marker of plurality (Lass 1990: 98; see also Bynon 1977: 37-38) as an example of phonology becoming exapted as morphology. The two case studies that I will present in this paper comprise another such example of "from phonology to morphology," and an example of "from syntax to discourse." If we are to retain the concept of exaptation as a useful tool of description (rather than explanation), its defining characteristics could be argued to be not the fact that it is restricted to morphology (although it is undoubtedly morphology that provides the most striking examples), but the fact that it is triggered by a clear breakdown in transmission. Although the social conditions of the reinterpretation of the aorist in Proto-Germanic are lost to us in the mists of prehistory, the setting of Lass' second case is one of migration and language contact, in which morphological features like gender, which may well require fairly robust evidence in first-language transmission to survive (see e.g. Blom & Weerman 2008, Aikhenvald

2000: 413-424), are more easily compromised. The adjectival ending whose interpretation was so closely bound up with the gender of nouns plunged into a vacuum, creating an input for the learner in which the earlier system could not be recovered. Lass calls this “the crucial 'junk' stage” (90). “Junk stages” are fertile grounds for exaptation, perhaps even their *sine qua non*.

What these cases have in common is the inbuilt predisposition of language learners to interpret differences in form as correlating with differences in meaning. The debris of a purely phonological rule that was not meaningful is invested with a meaning of sorts (the case of umlaut), and the same goes for the debris of a purely morphological rule (which may originally have been meaningful as a marker of (in)definiteness) in the case of the adjectival ending in Afrikaans. Learners may fine-tune their hypotheses of meaning correlates until they have a reasonable fit. Exaptation, then, is an accidental by-product of the (first and second language) acquisition toolkit: learners’ hypotheses may occasionally differ spectacularly from their “model”. It is then that we see how powerful the toolkit really is.

3. *From phonology to morphology (and syntax)*

Our first case study is the origin of mutations in Celtic. All the present-day Celtic languages show systems in which initial consonants change in well-defined morphological or syntactic configurations. Mutations derive from sandhi-phenomena, phonological assimilations of initial consonants to the endings of the previous word (Jackson 1953; Willis 2009: 127-131; Ball & Müller (1992). This process is shown in example (1), from Common Celtic:

(1) a. Common Celtic *abona māra
river large
‘large river’

Welsh afon fawr (/avon vawr/)

(cf. Strachan 1937[1909]: 9; Lewis & Pedersen 1974: 127)

b. Brythonic *tabarnā tekā
tavern fair
‘fair tavern’

Welsh tafarn deg (/tavarn de:g/)
(Thomas 1990: 23)

The initial m- in *māra* 'large' undergoes lenition ("soft mutation") to [v] between vowels, as does initial t- in *tekā* 'fair' to [d]; word-final voiceless consonants blocked the change, so that mār- and teg- remain unchanged in Brythonic */marjānos māros/ 'big Meirion' (Welsh *Meirion mawr*) and */eskopos tekos/ 'fair bishop' (Welsh *escob teg*) (Thomas 1990: 23). Lenition in Brythonic operates across word boundaries, with [v] and [d] allophones of /m/ and /t/, respectively. Its regularity as a phonological rule allows successive generations of speakers to acquire this system. But when unstressed vowels are lost, as the result of an independent, unrelated development, the phonological rule is no longer recoverable to a new generation of speakers. They hear the [m/v] and [t/d] alternations in their input, but cannot recover the conditioning environment. The alternations could have been abandoned altogether – just like the speakers in Lass' second case study could have abandoned the adjectival inflection – but instead, the alternation is reinterpreted as gender marking. This reinterpretation is inspired by the fact that many feminine nouns originally ended in *–a* and hence triggered lenition in the following consonant, unlike masculine nouns, which tended to end in *-os*. Lenition, then, was particularly frequent after feminine nouns.

The Brythonic feminine article also ended in a vowel (*sindā*), unlike the masculine article (*sindos*), resulating in a similar alternation for the initial consonant of the following noun (Thomas 1990: 31), further strengthening the link between mutation and gender perceived by later generations. Similar processes affected Irish:

(2) bean '(a) woman' – an bhean 'the woman' (bh=[v])
(O'Neill 2012)

Grammars of Modern Welsh, for instance, contain statements to the effect that '[T]he definite article… triggers soft mutation in a following feminine singular noun' (Watkins 1993: 313); 'Feminine singular nouns undergo SM [soft mutation] when preceded by the definite article'(King 1993: 31).

The phonological prehistory of the various types is complex. Strachan (1937 [1909]) noted that words that cause aspiration of a following plosive in Welsh originally appeared to have

ended in *–s*, and that it was this *–s* that was responsible for the aspiration, with the aspiration apparently persisting after its loss:

(3) a. Proto-Brythonic *$^{?}$*agos* 'and' (**ak* in Thomas 1990: 29) (ModW *ac* /ak/, *a*)
b. Present-Day Welsh *tad* 'father', but *mam a thad* 'mum and dad'
(Strachan 1937 [1909])

Subsequent research demonstrated that the situation was actually more complex: (i) The environment that caused aspiration originally turned out to be very similar to that of lenition, and affected similar phonemes (voiceless plosives); (ii) Aspiration operates far more variably across its targeted lexical set than lenition. These two facts prompted Thomas (1990: 27) to postulate a scenario in which the two phonological processes are chronologically ordered, with lenition affecting its targeted lexical set first; words that had not yet lost their final *–s* did not have the right conditioning environment for lenition, as they did not end in a vowel. By the time *–s* was lost, lenition had more or less run its course, and this new set of vowel-final words were instead targeted by aspiration – only *ei* "her" (from Brythonic */esjās/) and *tri* "three" (from Brythonic */trīs/) trigger aspiration in all three of the modern Brythonic languages (Welsh, Cornish, Breton) (Thomas 1990: 25). The greater dialectal variability of aspiration could then be an effect of the interaction of the loss of *–s* rule gradually working its way through the lexicon: words that lost their *–s* early became input to the aspiration rule, but those that retained *–s* longer did not.

The result of the relative ordering of the lenition and the aspiration rule has led to the situation that the Present-Day Welsh possessive pronoun *ei* triggers lenition when it means "his" (from Brythonic */esjo/), but aspiration when it means "her" (from Brythonic */esjās/): Brythonic */esjo tōtā/ "his people" is ModW *ei dud* (*tud* with lenition), whereas Brythonic */esjās tōtā/ "her people" is ModW *ei thud* (*tud* with aspiration). Similarly, *ei gar* is "his car" (*car* with lenition) and *ei char* is "her car" (*car* with aspiration) (Rhys Jones 1977: 89, 105; King 1993: 81).

Subsequent generations of Brythonic speakers capitalized on the three types of mutation (lenition, aspiration and nasal mutation) to develop an extremely productive "particle" syntax, in which homophonous particles (often reduced by grammaticalization to subminimal words with schwa vowels) are disambiguated by the type of mutation they trigger. Aspiration disambiguates

a "and" from the relative particle *a*, which triggers lenition, as in this Middle Welsh example, where *gweleist* has become *weleist*:

(4) Y vorwyn a weleist (ModW: y forwyn a welaist)
the girl that see-PRET-2sg
'the girl that you have seen'
(Strachan 1937[1909]: 51)

The negative particle *ny* in Middle Welsh (but not in Present-Day Welsh) provides a further example of the disambiguating function of mutation. *Ny* as a sentence negator causes aspiration:

(5) Ny chysgaf
not sleep-1sg
'I will not sleep'
(Strachan 1937[1909]: 20)

But *ny* as a negative relative particle causes lenition – and a similar system operates with the particle *ry* which causes aspiration as a perfective particle (in (7a)), but, like *ny*, lenition as a perfective relative particle (in (7b)):

(6) a. ny char [with aspiration of initial /k/ to /x/]
not love-3rd
'he does not love'
b. ny gar [with lenition of initial /k/ to /g/]
not love-3rd
'who does not love'
(Strachan 1937[1909]: 20)

(7) a. ry charas [with aspiration of initial /k/ to /x/]
PRT love-PRET-3rd
'he has loved'

b. ry garas [with lenition of initial /k/ to /g/]
PRT love-PRET-3rd
'who has loved'
(Strachan 1937[1909]:20)

Strachan notes that this contrast can only be observed in Middle Welsh poetry, which shows that this particular contrast was on its way out already at that early period.[5]

Similar disambiguating uses of the different types of mutations are found with the particle *yn*. *Yn* as a preposition, presumably the origin of the particle (but see the discussion in Borsley, Tallerman & Willis 2007: 317-9, esp. fn. 3, and Gensler 2002), triggers nasal mutation, because of its *-n*. This would appear to reflect the original phonological rule. When *yn* forms manner adverbs, or introduces predicative nouns and adjectives, it triggers lenition[6] (King 1993: 238, 292); when it forms the verbal noun, it does not trigger mutation. It is easy to see that, once such a system is in place, the mutation alone serves as a signal, and the particle can be deleleted, as in this example from Present-Day Irish:

(8) a. A Cholm! (vocative particle triggers aspiration)
'Colm!'
b. Cholm! (aspiration signals vocative)
'Colm!'
(O'Neill 2011)

Particle and mutation then become linguistic signs in their own right. King (1993: 22, 292) makes a similar observation for Welsh syntax: as a VSO-language, Welsh needs to demarcate the subject from the following complement, and has two strategies to do this by making sure that the subject is followed by one of these two linguistic signs: a particle *yn* when the finite verb is a form of *bod* "be", or a soft mutation (lenition) when it is a verb other than *bod* (particle and mutation in italics):

(9) a. Mae Dilwyn *yn* darllen rhagolygon y tywydd ar y teledu bob nos
is Dilwyn PRT read prospects the weather on the TV every night

'Dilwyn reads the weather forecast on TV every night'

b. Mi ddylai Dilwyn *dd*arllen y newyddion hefyd
PRT ought Dilwyn read the news too
'Dilwyn ought to read the news as well' (King 1993: 292)

With examples such as (9) we have entered the role mutations play in syntax, a fascinating area where the original phonological connection has been streamlined into marking subjects and direct objects (see e.g. Borsley, Tallerman & Willis 2007: 223-54, 313-6; Willis 2009: 154-5). These examples show how subsequent generations have reinterpreted and reworked the debris of a lost phonological rule that they encountered in their input. The reinterpretations are wholly novel (from gender marking to particle-marking and the marking of syntactic function), and hence, they provide a means of renewal (in the grammaticalization sense, Hopper and Traugott 2003). Whether they are the result of first or (adult) second language acquisition is a matter of speculation, but most probably the former: Blom and Weerman's (2008) findings suggest that adult second language acquisition would tend to jettison rather than reinterpret and reuse. The wide range of the novel interpretations of the Celtic system of mutations is reminiscent of Lass' findings in his second case study, where the reinterpretations of the adjectival inflection ranged from a prosodic phenomenon (adjectives of more than one syllable tend to have the ending) to a lexico-semantic phenomenon (the inflected and uninflected forms of an adjective each occasionally giving rise to a distinct lemma, e.g. *enkel* "solitary" versus *enkele* "single, unmarried"). The retention of the adjectival ending as an ending (rather than as a reinterpretion of the *–e* as part of the stem, as in the *enkel/enkele* split) is probably constrained by the fact that the predicatively (as opposed to attributively) used adjectives never had the adjectival ending, and by the fact that there was a large number of adjectives with divergent predicative/attributive pairs anyway, due to other independent phonological phenomena: *vas* (<*vast*) versus *vaste* "fast", *dood* versus *dooie* (<*dode*) "dead", and many others (see Lass 1990: 93).

We can be more certain about the locus of change of our second study, the reinvention of verb-second (subject-verb inversion) as a discourse marker.

4. *From syntax to discourse*

The second case study is the aftermath of the loss of verb-second movement in early Modern English, where relic instances of verb-second were re-interpreted as pragmatic/procedural rather than syntactic (Fludernik 1996).

Dutch and German exhibit an asymmetry in word order patterns in main and subclauses: subclauses are verb-final, whereas main clauses have the finite verb in second place. Koster (1975) argued persuasively that the underlying order should be assumed to be the Subject-Object-Verb order of the subclause. Main clause orders can then be derived by two movement rules: one that puts the finite verb into second position, and a second rule that topicalizes a constituent from the clause into first position. This constituent may be moved from any position in the clause, and may have any syntactic function. These two movement rules have been labeled collectively as "verb-second."

The motivation in formal accounts tends to be couched in terms of the presence of a feature on C which must be checked by an element in Spec,CP (the first position), a language-specific phenomenon (the V2 parameter), and the function tends to be broadly described as 'Topicalization' – making something a topic. Such descriptions account quite adequately for the Dutch and German data, as V2 is clearly a syntactic rule applying in all main clauses; it explains the main clause/subclause asymmetry in that the C-position in subclauses will be filled by the complementizer. The status of the verb-movement rule is not as clear-cut in earlier Germanic dialects, including Old English, and its original motivation may well have been discourse or information-structural rather than purely syntactic. Koster's assumption of underlying SOV for Modern Dutch fits the intuitive notion that Germanic main clauses were SOV at an earlier stage but developed verb-second initially as a response to pressures at the level of information structure; the motivation behind verb-second may have been at first stylistic, an optional rule to draw attention to the special information-structural status of the first constituent. It is a common finding that subclauses tend to preserve older orders, whereas main clauses tend to innovate: main clauses have to satisfy various communicative requirements, the positioning of focus and discourse-old or discourse-new material, and they therefore tend to develop special constructions not found in the subclause (see Bybee 2001). The finite verb may possibly have functioned as a focus marker first, as still in Hungarian (Comrie 1989: 63), and may later have become entrenched as a syntactic device. Old French (see eg. de Bakker 1997, Rinke & Meisel 2009) and

Middle Welsh (Willis 1998: 50-62) appear to have had similar verb-movement rules, although clearly not of the Germanic type.

The verb-second rule operates slightly differently in Old English than in Modern Dutch or Modern German, as was demonstrated by van Kemenade (1987) using Koster's diagnostic tests, and this difference could perhaps provide some pointers to the original motivation of this movement rule. When the first constituent is a *wh*-word, the negator *ne* or a member of a restricted group of adverbs, most prominently *þa* 'then', the finite verb (in italics in (10a–b)) will immediately follow in second position in Old English, as it does in Modern Dutch or German, with the subject, whether nominal (as *seo eadiga Margareta* in (10a)) or pronominal (as *he* in (10b)), in the third position:

(10) a. ða *geherde* seo eadiga Margareta and hi hit on bocum fand,
then heard the blessed Margaret and she it in books found
þæt þa cinges and þa ealdormenn and þa yfela gerefan ofslogen æfre and
that the kings and the aldermen and the evil reeves killed ever and
bebyrodon ealle þa godes theowas, þe þær on lande wæron
buried all the god's servants who there in land were
<LS 14 (MargaretAss) 32>[7]

'Then the blessed Margaret heard said, and found it written in books, that the kings and aldermen and the evil reeves were constantly killing and burying all the servants of God who were there in that country'

b. ða he on his wege rad, þa *beseah* he on þæt eadigan mæden,
then he on his way rode, then looked he on that blessed maiden
þær þe hi sæt wlitig and fæger onmang hire geferan.
there where she sat beautiful and fair among her companions
ða *cwæð* he to his cnihtum: Ridað hraþe to þære fæmnan and axiað hire,
then said he to his servants ride quickly to that girl and ask her
gif hi seo frig. < LS 14 (MargaretAss) 53–4>
if she is free

'When he was riding on his way, he beheld that blessed maiden where she was sitting among her companions, beautiful and fair; then he said to his servants: "Ride quickly to

that girl and ask her if she is free."'

However, there is an important difference in the working of the verb-second rule that obscures the resemblance of OE to the other West-Germanic languages: if the first constituent is a topicalized nominal or prepositional object, or adjunct, rather than a *wh*-word, the negator *ne* or an adverb like *þa* 'then', and the subject is a pronoun, things are different. In (11), with the prepositional object *On þe* 'in you' in first position, the pronoun subject precedes the finite verb, which now looks to be in third place (finite verb in italics):

(11) And seo eadiga Margareta hire handan upp ahof and hi to gode gebæd
and the blessed Margaret her hands up lifted and her to God prayed
and þus cwæð: On þe ic *gelefa*... < LS 14 (MargaretAss) 119>
and thus spoke: On thee I believe
'And the blessed Margaret lifted up her hands and prayed to God and spoke thus: "In you I believe..."'

The different positions for pronominal subjects in (10b) and (11) could perhaps be regarded as the outcome of what were originally two different verb-placement rules, one motivated by a need to mark off foci, which would include verb-movement after first-position elements like question words, negation, and contrastively-focused phrases, and another verb-placement rule to mark off topics and other backgrounded information. This is in line with Lambrecht's insight (Lambrecht 1994: 31–2) that the first position of a main clause is a "cognitively privileged position" for which marked topics and marked foci naturally compete. The former type of verb-placement, demarcating a focus area, can be argued to have survived into Present-Day English (PDE) as subject-auxiliary inversion (Los & Komen forthc.; see also below). The latter type, verb-movement after first-position subjects, objects and adverbials as in (11), may have served a different purpose: marking off given – the aboutness topic and other background elements – from new (as argued in Hinterhölzl & Petrova 2010: 319 for Old High German).

Verb-second starts to decline in the Middle English period, for reasons that are as yet not fully understood. Some language-internal factors that may have played a role are the loss of verbal morphology (Roberts 1993, Roberts and Roussou 2003) and the loss of null subjects

(Haeberli 2002). Lightfoot (1999) argues that verb-second grammar requires robust cues in the input in acquisition for its transmission, and that there was a hitch because of the dialect contact situation of Northern and Southern dialects – the Southern dialect had the complex verb-second rule as exemplified by examples (10-11) above, but the Northern dialect may have had a more simplified version; Kroch, Taylor & Ringe (2000) argue on the basis of Northern-Old English glosses of a Latin text that verb-second operated differently in the Northern dialect, possibly because of influence from Old Norse. These dialects may have come into contact at the edges of the Danelaw from late Old English onwards, or in London in later Middle English, with the influx of northerners on the back of the wool trade; verb-second experiences a steep decline from the late fourteenth Century onwards, with the fifteenth Century as a crucial period of loss (Warner 2007; see also the references in Fischer et al. 2000: 133).

Smith (1996), in his account of the origins of the Great Vowel Shift in late ME/eModE, emphasizes the importance of the demographic situation in fifteenth-century London as a hotbed for language change: the depopulation after the Black Death of 1349–50, the resulting changes in social structure and population mobility, and the rise of the wool trade, led to massive immigration into London from the North and the Midlands. There were sociolinguistic changes as well: from the end of the fourteenth century onwards, French lost its status as language of the nobility (a legacy of the Norman Conquest) which meant that there was now room for an English variety to acquire social prestige and become a social "distancer", the language aspired to by social climbers; the changing social structure now made it possible to fulfil such ambitions. People who change their speech in adulthood for reasons of prestige lack the language learning capacities of the child and tend to acquire their new "lect" imperfectly, often overshooting their mark (Smith 1996). If the Northern variety did indeed have a slightly different version of the verb-second rule, the contact situation in London may well have precipitated the demise of the rule. The presence of two distinct versions of the rule in the input may have led to its decline, and the emergence of Subject-Verb order as the canonical order for both main and subclause.

Verb-second still survives in PDE as subject-auxiliary inversion (or I-to-C movement). It has a syntactic rather than a pragmatic trigger: interrogatives, wide-scope negation (*rarely*, *never*) or focus markers (*only*, *precisely*):

(12) a. Only after I had been in the room for a few minutes did I realize that everyone was staring at me.
b. *Only after I had been in the room for a few minutes, I realized that everyone was staring at me.

(13) a. Rarely did I hear such overtones of gratitude as went into the utterance of this compound noun. (Green 1980: ex. (32e), cited in Birner and Ward 1998: 157).
b. *Rarely I heard such overtones of gratitude as went into the utterance of this compound noun.

This syntactic rule appears to be the reflex of verb-movement to demarcate a focus area, which I earlier tentatively identified as an original trigger of verb-movement.

The other motivation – the verb as a demarcator of given from new information – survives as subject-verb inversion, also known as locative inversion, which in PDE has a discourse rather than a syntactic trigger. Examples are (14)–(15); the relevant verbs are given in italics.

(14) [Performer] offers to cause the card to penetrate the deck and the handkerchief and come out on the table. But when he lifts the bundle, nothing has happened. He tries again and this time, on top of the folded hanky *is seen* the imprint of the selected card! (Magic Inc. Trick Catalogue #25, p. 71; from Birner & Ward 1998: 157)

(15) To the left of the altar one of the big wall panels with rounded tops opens, it is a secret door like in a horror movie, and out of it *steps* Archie Campbell in a black Cassock and white surplice and stole. (Updike 1981: 242, from Birner & Ward 1998: 158).

Birner and Ward (1998) show that this type of inversion reorders information so that the more familiar entity is mentioned first, and the less familiar one, the subject, last. Although we have a trigger here that is very similar to the second motivation we identified earlier for the rise of verb-second in pre-Old English times, (14-15) probably do not involve movement of the finite verb, and hence, are not verb-second in the strictest sense; even in Old English, long, informative subjects could be extraposed to the end of the clause (the “late subject”construction; see Warner

2007). In (15), we have an entire verbal string is seen intervening between adverbial and subject, and not just the finite verb, which is not what we find in verb-second.[8]

What makes the story of the decline of verb-second interesting from an exaptation point of view is its revival in the 16th century, when the verb-second rule as a syntactic operation is defunct. If we see the dialect-contact situation (wholesale immigration in the wake of the wool trade) as an important factor that precipitated the decline of verb-second as a canonical rule, we would have a similar situation as in Lass' second case study. Learners still encounter relic verb-second instances in their input, and this would then be the "junk" stage (see above). What happens then is that learners converge on a number of different new uses for the construction, and this is what has dogged the investigations into its decline, which presents a diffuse, confusing picture. Fischer et al. (2000: 133) cite Jacobsson (1951) and Schmidt (1980), who report a steep decline from the late fourteenth century onwards, with a short-lived revival in the sixteenth century. Nevalainen (1997), on the other hand, reports a steady decline from 37% in the fifteenth century to well below 10% at the close of the seventeenth century. Bækken's (1998) extensive corpus research spans the relevant period (1480– 1730), but no definite trend emerges apart from the fact that verb-second becomes really uncommon only after 1630. Van Kemenade and Westergaard (2012.) distinguish between verb-second with pronominal and nominal subjects, and between verb types (particularly (pre-)modals and unaccusatives), and are able to identify definite trends, but the picture remains extremely complex. All these studies report wildly varying rates of verb-second, within individual periods, individual text types and even individual writers. Fischer et al. (2000: 133) hint that its revival in the 16th century is "perhaps [..] a stylistic feature," without giving any more details.

One of the features of the "later" version of verb-second is that the distinction between pronominal and nominal subjects, as in *On þe ic gelefa* 'In you I believe" of (11), is no longer present (see eg. (16)-(19) below) – we are no longer talking Information Structure (the distribution of given versus new information in a clause) or syntax (verb-second as a syntactic rule) here but discourse. The "stylistic feature" in this revival is a discourse feature: verb-second is reanalysed as a procedural signal, a metalinguistic sign to the hearer/reader. Not surprisingly, speakers/writers do not converge on exactly the same function, and I will suggest a number of such functions below. Note that in all these cases we are not talking about the "late-subject"

construction (subject-verb or locative inversion) identified above, which still has a clear role in English today; we are talking about movement of a finite verb only.

The fifteenth century Capgrave's Chronicle (Lucas 1983) uses verb-second fairly consistently as an episode boundary marker (relevant verb in italics):

(16) So *was* he taken and sent to Couentre, þere drawen and hanged. Men sey þat he was sent be on William Marys, þat was outelawed and dwelled in a ylde betwix Cornwayle and Wales – þei þat dwelle þere clepe it Lundy. In xxii Zere of Herry *was* Edward þe First born in þe feste of Seynt Bothulp, and he was baptized of Otho, legat, and confermed be Seint Edmund, þan bischop of Cauntirbury. (cmcapchr,120.13-17)

Of the 15 instances[9] of *In* [numeral] *Zere of* [king's name], or *In þis same Zere* or *eke in þis Zere* that mark the beginning of a new episode in the two fragments of Capgrave's Chronicles in the Middle English part of the Helsinki Corpus, 6 have movement of the finite verb, like (16). This lack of systematicity is not surprising because discourse markers are always choices rather than obligatory elements. The finite verbs are *exiled*, *began*, *came* (twice), *died*, and *was* (in (16)), which argues against these being instances of the "late-subject"construction, as this targets a specific set of verbs (Warner 2007).

Fludernik (1996: 593) has suggested a different function for verb movement in the 16th century. She notes that Roper in his Life of Sir Thomas More appears to use it to signal a wrapping-up, a movement towards a conclusion (relevant verbs in italics):

(17) And because he was desirous for godly purposes somtyme to be solitarye and sequester hymselfe from wordly company, a good distance from his mansion house *builded* he a place called the Newe Buildinge [...] in which as his use was upon other dayes to occupye himselfe in prayer and studye togeather, soe on Frydaye there usually *continued* he from morninge to eveninge spending his tyme only in devoute prayers and spiritual exercises. [...] Thus *delighted* he evermore not only in virtuous exercises to be occupied himselfe, but alsoe to exhorte his wife and children and houshoulde to embrace and followe the same. (Roper's Life of Sir Thomas More, written ca. 1555, first printed in 1626; quotation from edition of 1910: 219-220)

Note that this verb-second does not show the earlier distinction between nominal and pronominal verbs that we saw in examples (1)-(2), and the verbs are lexical verbs, not (pre-)modals or unaccusatives. The third instance, after *Thus*, supports other findings that show that *then* and *thus* continue to trigger verb-movement for quite some time after the verb-second rule as a syntactically-triggered operation has become defunct (Van Kemenade & Westergaard 2012).

A search of fronted verbs throughout the extended and syntactically annotated Helsinki Corpus (Kroch & Taylor 2000, Kroch, Santorini & Delfs 2004, Kroch, Santorini & Diertani 2010) shows up another revival of verb-second in the 19th century: there are many instances of verb-second that are not "late-subject" constructions (subject-verb or locative inversion) or subject-auxiliary inversion in a 19th century translation of Boethius' *De Consolatione Philosophiae* and a Bible translation. Their purpose appears to be to mark an elevated style, as deliberate archaisms (relevant verbs in italics):

(18) by thine own act *hast* thou raised thyself in the scale of excellence; *hast* thou perverted thy affections to baser things,… (boethja-1897,148.323-4)

(19) A light *shalt* thou make to the ark, and to a cubit *shalt* thou finish it upward; and the door of the ark *shalt* thou set in the side thereof; (erv-old-1885,6,1G.223-5)

Here, too, it is clear that this is not the earlier Old English verb-second rule with its distinct positions of pronominal and nominal subjects: the pronominal subjects follow rather than precede the finite verb.

Even in PDE, verb-second has a place of sorts in jocular phrases like (20):

(20) Bench Pressing Dwarves - I Kid You Not! (Headline by financial reporter Jane Wells on the CNBC website, http://www.cnbc.com/id/28793942)

The story of which (20) is a headline is at once ludicrous and sinister: people of small stature are paid to act as weights for weight lifting exercises in a US gym, underlining the desperate jobs people have to resort to as an indication of how the economic climate is worsening. The word

order of I kid you not in (20) does not show *do*-support or the progressive form as in (21), which is the form that would be expected given PDE syntax:

(21) I am not kidding you!

Instead, (20) echoes the syntax of an earlier stage of English. *I kid you not* has apparently found its way back into the language as a catchphrase, said to be popularized by Jack Paar, host of the Tonight Show from 1957 to 1962 (see http://www.phrases.org.uk/bulletin_board/27 /messages/1090.html), and has established a niche for itself as an idiom with a discourse function. It has additional meanings that go beyond those of its "productive" counterpart in (21): irony, possibly flippancy, expressing speaker evaluation and speaker stance. Although we can only guess at Jack Paar's (if he it was) original motivations for coining the phrase, the archaic ring of (20) must surely have been one of them. That Present-day English speakers are able to resurrect instances like (20) at all is because texts of an earlier age are still around as part of a nation's cultural heritage. An utterance like (20) is immediately recognized as "Shakespearean", and it is this contrast between the "heightened" language of (20) and the banality of the obviously modern verb *to kid* that accounts for some of its effects. *I kid you not* must have been used by its original inventor "for a special communicative effect that gives a short-term advantage to the innovator" (Haspelmath 1999: 1061), but has been taken up by other speakers and so acquired a momentum, and a meaning, of its own. In discourse terms, (20) can be said to have an *expressive* function in that it encodes speaker evaluation and signals a point of view, and a *metalinguistic* function in that it signals a particular text type and situates a text within a typology of discourse forms (see e.g. Fleischman 1990).[10]

The word order in (20) is obsolete, completely unproductive and does not have any open "slots" that would qualify it as a construction in the sense of Construction Grammar (eg. Goldberg 1995), witness the non-occurrence of variants like (22):

(22) *I fool you not!

The subject-slot appears to be accept first-person subjects only (*I kid you not, we kid you not*).

These revivals appear to have as their locus of change adults, who come into contact with these relic forms when they are introduced to the literature of earlier centuries as part of their cultural heritage.

5. *Conclusion*

I have made a case for a definition of the concept exaptation as a phenomenon that is not restricted to morphology. Phonology may be exapted as morphosyntax, and syntax may be exapted as discourse marking. What has been called linguistic exaptation makes use of the usual mechanisms of language change - some changes stand out because they are more striking than others, but the underlying mechanisms are the same.

The reason why some changes are more striking than others is that they occur in the wake of an earlier change that has obscured the evidence for systematicity in the input of new generations of learners. Such breakdowns in transmission make it more challenging for learners to recover the same interpretation of a linguistic feature as their predecessors. They will often succeed in coming up with a system nevertheless by fine-tuning hypotheses until they have a reasonable fit. What Lass calls exaptation, then, is an accidental by-product of the acquisition toolkit: learners' hypotheses may occasionally differ spectacularly from their "model". It is then that we see how powerful the toolkit really is.

Gould suggests that we should see organisms as "bundles of historical accidents, not perfect and predictable machines" (1983: 101, quoted in Lass 1990: 81). This is what Marcus has called a *kluge*: a jerry-rigged short-cut, 'a clumsy or inelegant – yet surprisingly effective – solution to a problem' (Marcus 2008: 2). Marcus argues that evolution is all about kluges. Organisms cannot be redesigned from scratch: they have to stick to their basic design plan to remain viable life-forms and all evolution can do is marginal tinkering and tweaking with what is there already. Although languages are continually being reinterpreted anew by each successive generation in language acquisition, languages, too, need to remain viable as communication systems, which limits the scope for new inventions: if these are too idiosyncratic, there will not be a critical mass to allow convergence. This imposes inherent constraints on the hypothesis space. Although language breakdown situations may offer more scope for speakers to come up

with reinterpretations that deviate markedly and spectacularly from those of their immediate predecessors, these new functions themselves are not spectacularly different from what is generally found in human languages: gender marking, number marking, focus marking, procedural signs for holding or relinquishing the floor, etc. If there are enough of such speakers to create something of a momentum, and there is convergence, we linguists sit up and take notice, but ultimately the process of exaptation is only the product of our usual language toolkit operating in unusual circumstances. Language change is all about kluges, too.

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[2] A related term in earlier publications (eg. Gould and Lewontin 1979), borrowed from architecture, is *spandrel*, to characterize structures in organisms that have no adaptive function, but are consequences of the development of structures that do – nipples in men, for instance. The problem here, in biology as in linguistics, is that we can never be sure that structures had or have no function at all – this is also the critique that has been levelled against Lass (eg. Vincent 1995: 435ff).

[3] I use the term "second language" in its broadest sense here, to include any acquisition of new lects, or new features (social or dialectal) that takes place after a particular lect has already been acquired as a speaker's "first" language.

[4] This does not necessarily mean that these communities are monolingual. See de Vries (2007) on the social situation of the polylinguistic communities of Papua New Guinea.

[5] Present-Day Welsh marks negation by *ddim*, an erstwhile negative polarity marker ("thing, anything") that has taken over the expression of negation from the original negative head, which survives as *d-* , a reduction of *nid* (Middle Welsh *ny/nyt*) (a case of Jespersen's cycle of negation, completely parallel to French *ne...pas*). See Poppe 1996, Willis 2010.

[6] but not of all of the nine initial consonants that normally undergo the mutation – the exceptions are *ll-* and *rh-* (King 1993: 292).

[7]The reference to an OE text enclosed in <<>follows the system of short titles as employed in Healey and Venezky (1985 [1980]) (in turn based on the system of Mitchell, Ball and Cameron 1975, 1979). It is identical to the TEI reference in the Toronto Corpus, which means that line numbers refer to the beginning of the sentence rather than the line in which the relevant structure occurs.

[8] Inversions as in (15-16) have figured in the literature as a diagnostic for unaccusative verbs, i.e. verbs that do not have external arguments; the surface subject starts out in object position. Such an analysis lends support to the "late subject" analysis in that it could be argued that these subjects remain in their original position, following the verb. The primary trigger for these inversions is information-structural rather than syntactic, however, and unergative verbs are also possible, as long as they are informationally light (Levin & Rappaport Hovav 1995: 230-2, 251-

260).

[9] Instances like (i) with null expletives were not counted, nor "late subject" constructions like (ii):

(i) In a councell at London þis Zere was ordeyned þat þe festes of Seynt George and Seynt Dunstan schuld be dobbil festes. (cmcapchr 238.16)
(ii) In þe þird Zere of þis kyng were chosen worchipful men to go to þe councell at Constauns … (cmcapchr 242.14)

[10] One of the reviewers informs me that *How goes it*? and *What say you*? work in the same way.